CLAIMS

We claim:

1. An electronic isolator between a source stage and a load stage, including configuring means for configuring said isolator to appear as an infinite impedance to said source stage.

2. The electronic isolator of claim 1 wherein said configuring means comprises a voltage source.

3. The electronic isolator of claim 2 wherein said isolator means comprises a T-configuration coupled to said voltage source.

4. The electronic isolator of claim 3 wherein said voltage source is a controllable voltage source.

5. The electronic isolator of claim 1 wherein said configuring means is an operational amplifier with negative feedback.

6. The electronic isolator of claim 5 wherein said configuring means comprises a gain controlled stage.

7. The electronic isolator of claim 6 wherein said gain controlled stage is a divider network.

8. The electronic isolator of claim 3 further including an input amplification circuit between an electrical input of said source stage and an attenuation circuit network.

9. The electronic isolator of claim 8 including means for configuring control signals for said controllable sources.

10. The electronic isolator of claim 9 wherein said control signals include reference signals and negative feedback signals.

11. The electronic isolator of claim 10 wherein said configuring means includes circuitry for determining the gain of an input amplification circuit..

12. The electronic isolator of claim 10 wherein said input amplification circuit gain controls said reference signal level.

13. An electronic isolator between a source stage and a load stage comprising:

an electrical input comprising at least one source electrical connection connected to the source stage,

an electrical output comprising at least one load electrical connection to the load stage,

at least one circuit path into which electrical noise is directed away from the source and load electrical connections.

14. The isolator of claim 13 wherein insertion loss from the electrical input to the electrical output is substantially less than insertion loss from the electrical output to the electrical input.

15. The isolator of claim 3 wherein said isolator redirects noise present on the electrical output to a circuit path other than the electrical connections to the source stage.

16. The electronic isolator of claim 13 wherein at least one of said electrical input and said electrical output comprise at least one conductor using a ground signal return path.

17. The electronic isolator of claim 13 wherein at least one of said electrical input and said electrical output comprise a plurality of conductors not using ground signal return paths.

18. The electronic isolator of claim 15 wherein at least one of said electrical input and said electrical output comprises at least one conductor pair conducting differential signals.

19. The electronic isolator of claim 18 further including an attenuation circuit network comprising at least one lattice attenuator network for each conductor pair.

20. The electronic isolator of claim 17 wherein at least one of said electrical input and said electrical output comprise groups of three conductors each conducting three phase delta configuration signals.

21. The electronic isolator of claim 13 including a controllable source that is a current or voltage controlled voltage source circuit.

22. The electronic isolator of claim 13 wherein said controllable source is an operational amplifier.

23. The electronic isolator of claim 13 wherein said controllable source is an amplifier circuit.

24. The electronic isolator of claim 19 wherein said amplifier circuit includes a Class A amplifier.

25. The electronic isolator of claim 24 wherein said amplifier circuit includes an emitter follower output stage.

26. The electronic isolator of claim 25 wherein said amplifier circuit includes a Class A amplifier.

27. The electronic isolator of claim 13 wherein at least one of the input and the output of said controllable sources comprise circuit structures providing the function of series, direct current blocking capacitors.

28. The electronic isolator of claim 13 wherein said attenuation circuit networks comprise circuitry providing the function of a networks of resistors.

29. The electronic isolator of claim 13 wherein said attenuation circuit networks include at least one active circuit that determines the impedance of at least one circuit path within at least one of said attenuation circuit networks.

30. The electronic isolator of claim 13 wherein at least one of said attenuation circuit networks contains circuits providing the function of frequency responsive passive components.

31. The electronic isolator of claim 13 wherein the frequencies of said noise redirected to said circuit paths other than the electrical connections to the source stage are limited by the operating frequency range of said controllable sources.

32. The electronic isolator of claim 31 wherein a plurality of said controllable sources are responsive to distinct, non-overlapping frequency bands.

33. The electronic isolator of claim 32 wherein at least one of said controllable sources is an operational amplifier.

34. The electronic isolator of claim 32 wherein said controllable sources are connected in series driving one of said electrical noise redirection circuit path.

35. The electronic isolator of claim 32 wherein said controllable sources drive separate noise redirection circuit paths wherein said noise redirection circuit paths are connected to a common node.

36. The electronic isolator of claim 13 wherein said attenuation circuit networks include at least one T-configuration network.

37. The electronic isolator of claim 13 wherein said attenuation circuit networks include at least one Pi-configuration network.

38. The electronic isolator of claim 13 wherein said attenuation circuit networks include at least one Bridged-T-configuration network.

39. The electronic isolator of claim 13 wherein said attenuation circuit networks include at least one lattice configuration network.

40. The electronic isolator of claim 13 wherein said attenuation circuit networks include said circuit paths into which said electrical noise is redirected.

41. The electronic isolator of claim 13 including means for configuring the control signals for said controllable sources.

42. The electronic isolator of claim 41 wherein said configuring means include a reference signal.

43. The electronic isolator of claim 42 wherein said reference signal is adjusted to compensate for signal loss occurring in part of said attenuation circuit networks.

44. The electronic isolator of claim 43 wherein said reference signal adjustment is made using at least one resistor divider network.

45. The electronic isolator of claim 44 wherein said resistor divider networks are connected to said electrical input.

46. The electronic isolator of claim 43 wherein said reference signal adjustment is made using an active circuit which tracks and scales said electronic isolator input signals.

47. The electronic isolator of claim 41 wherein said configuring means includes at least one negative feedback signal.

48. The electronic isolator of claim 47 wherein said negative feedback signal originates at a circuit node into which said electrical noise is redirected away from said electrical input..

49. The electronic isolator of claim 48 wherein at least one of said controllable sources is an operational amplifier connected as a voltage follower.

50. The electronic isolator of claim 13 further including an input amplification circuit between said electrical input and said attenuation circuit networks.

51. The electronic isolator of claim 50 including means for configuring control signals for said controllable sources.

52. The electronic isolator of claim 51 wherein said control signals include reference signals and negative feedback signals.

53. The electronic isolator of claim 52 wherein said configuring means includes circuitry for determining the gain of said input amplification circuit..

54. The electronic isolator of claim 52 wherein said input amplification circuit gain controls said reference signal level.

55. The electronic isolator of claim 52 including means for reducing said negative feedback signals.

56. The electronic isolator of claim 13 wherein said controllable sources redirect noise appearing on the electrical input away from the electrical output and into said noise redirection circuit paths.

57. The electronic isolator of claim 21 wherein said controllable source is a pulsed voltage source.

58. The electronic isolator of claim 13 including means for detecting conditions of anomalous operation.

59. The electronic isolator of claim 58 including means for producing at least one control signal to said source stage to determine the electrical power entering said electronic isolator electrical input.

60. The electronic isolator of claim 59 including means for producing a time delay between the time of detection of one said conditions of anomalous operation and the production of said control signals.

61. The electronic isolator of claim 59 wherein controllable source is configured so as to absorb the maximum, peak, source stage generated, electrical signal power present under said conditions of anomalous operation during the time between the time of detection of one of said conditions of anomalous operation and said determination of said electronic isolator electrical input.

62. The electronic isolator of claim 58 including means for switching said electronic isolator electrical output away from said load stage.

63. The electronic isolator of claim 62 including means for dissipating the electrical input power to said electronic isolator in at least one dummy load resistor.

64. The electronic isolator of claim 63 wherein said at least one dummy resistor is internal to said electronic isolator.

65. The electronic isolator of claim 62 wherein said switching means is a circuit including at least one relay.

66. The electronic isolator of claim 62 wherein said switching means is a circuit including at least one bipolar transistor.

67. The electronic isolator of claim 62 wherein said switching means is a circuit including at least one field effect transistor.

68. The electronic isolator of claim 62 wherein said switching means is a diode, RF switching circuit.